



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,142	12/18/2001	Hoang Viet Nguyen	NL 000730	4621
24738	7590	03/07/2005	EXAMINER	
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 1109 MCKAY DRIVE, M/S-41SJ SAN JOSE, CA 95131			ROSE, ROBERT A	
			ART UNIT	PAPER NUMBER
			3723	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,142	NGUYEN ET AL.	
	Examiner	Art Unit	
	Robert Rose	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-6, 8-11, 14-24, and 37 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Hu et al. Hu et al disclose an arrangement and method for cmp comprising all of the subject matter set forth in applicant's claims above. Note first dispensing means(56), and second dispensing means(70) for dispensing first and second fluids on the polishing pad, the first fluid containing an etching agent and the second fluid containing an abrasive slurry with a passivating agent.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 12-13, 25, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. The method and apparatus of Hu et al is designed for polishing of metal oxide layers, formed on the surfaces of substrates from passivation of the exposed metal. To polish tungsten in this manner would have been an obvious application to those of ordinary skill in the art, as tungsten layers are typically polished by forming a passivation layer and removing that layer by cmp. The use of hydrogen

peroxide as an oxidizing agent in cmp abrasive slurries, and phthalic acid as the passivating agent are old and well known in the polishing art.

5. Claims 16, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al in view of Sandhu et al. Sandhu et al teaches at column 5, lines 35-40 that the wafer carrier may be rotated in either direction during polishing. To rotate the wafer carrier in the apparatus of Hu et al in either clockwise or counterclockwise direction would have been obvious as taught by Sandhu et al.

6. Applicant's arguments filed December 16, 2004 have been fully considered but they are not persuasive. Applicant's amendment has overcome the rejection with respect to 35USC 112, second paragraph. However, the rejection under 35USC 102(a), as anticipated by Hu et al is still deemed to apply. Applicant argues that the specific locations of the first and second dispensing means are not set forth therein. However, applicant's claims merely specify the first dispensing means location(L1) as being in "a downstream direction with respect to the holder location(L0)", and the second dispensing means location(L2) as being in "an upstream direction with respect to the holder location(L0)". Since the pad is rotating, any point on the pad except for the very center can be arbitrarily defined as either upstream or downstream of the holder location. It is clear from figure 5 that neither the first nor second dispenser means are located at the pad center. Thus, one may consider the first and second dispenser means as either upstream or downstream of the holder location for the purposes of meeting the claim language of claim 1. Applicant has further argued that figure 5 shows the wafer out of contact with the pad during application of the dispensing agents.

Art Unit: 3723

However, there is no stipulation with regard to holder location requiring wafer-to-pad contact during dispensing in the claims. Further, column 8, lines 58-62 clearly indicates that the wafer and conditioner may be in simultaneous contact with the pad, if so desired, for in-situ conditioning during polishing. Applicant has not argued the examiner's statement "tungsten layers are typically polished by forming a passivation layer and removing that layer by cmp", and the examiner's position that the use of hydrogen peroxide as an oxidizing agent in cmp abrasive slurries, and phthalic acid as a passivating agent are old and well known in the polishing art. These unchallenged statements are therefore taken to be admitted prior art.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication should be directed to Robert Rose at telephone number (703) 308-1360.

Application/Control Number: 10/023,142
Art Unit: 3723

Page 5

Robert Rose
Primary Examiner
Art Unit 3723

A handwritten signature in black ink, appearing to read "Robert Rose", written over the printed name.

Rr

March 2, 2005.